

CLAIMS:

What is claimed is:

1. A needle assembly for an intradermal injection device comprising:
a needle cannula having a needle tip; and
a limiter surrounding said needle cannula and having a skin engaging surface ,
wherein said limiter is moveable from a first position in which an elongate portion of said needle cannula is exposed, to a locked second position in which said limiter is not movable from said second position to said first position and in which said needle tip extends beyond said skin engaging surface a distance of about 3 mm or less.
2. The needle assembly of claim 1, wherein said needle tip extends beyond said skin engaging surface a distance of about 0.5 mm to about 3 mm.
3. The needle assembly of claim 2, wherein said needle tip extends beyond said skin engaging surface a distance of about 1 to about 2 mm.
4. The needle assembly of claim 1, wherein said skin engaging surface is substantially planar.
5. The needle assembly of claim 1, wherein said limiter comprises:
a support member arranged about said needle cannula; and

an outer sheath arranged about said support member and selectively slidable with respect thereto from said first position to said second position.

6. The needle assembly of claim 5, wherein said limiter further comprises first means for releasably holding said outer sheath in said first position, and second means for lockingly holding said sheath in said second position.

7. The needle assembly of claim 6, wherein said first means comprises a retaining projection and stop member on said support member and a projection on said sheath.

8. The needle assembly of claim 6, wherein said second means comprises a proximal stop arranged toward a proximal end of said support member, said proximal stop being configured so as to prevent further proximal movement of said inwardly directed projection from said retracted position.

9. The needle assembly of claim 8, further comprising a recess proximal said retaining projection for accommodating said inwardly directed projection of said sheath when said limiter is in said retracted position.

10. The needle assembly of claim 5, wherein said support member includes a distal stop toward a distal end of said support member, a ramp proximal to said outwardly directed projection and an indent interposed therebetween, wherein said inwardly directed projection resides within said indent when said limiter is in said extended position.

11. The needle assembly of claim 10, wherein said inwardly directed projection includes a proximal edge, said ramp includes a distal edge, whereby said proximal edge is in abutting contact with said distal edge when said limiter is in said extended position.

12. The needle assembly of claim 5, further comprising a hub about said needle cannula, said hub being adapted to accept a container for delivering a substance.

13. The device of claim 12, wherein said hub and said support member are unitarily formed.

14. A drug delivery device for use in administering intradermal injections, comprising:

a needle cannula having a needle tip;

a limiter surrounding said needle cannula and having a skin engaging surface, wherein said limiter is moveable from a first position in which an elongate portion of said needle cannula is exposed, to a locked position in which said limiter is not movable from said second position to said first position and in which said needle tip extends beyond said skin engaging surface a distance of about 3 mm or less; and

a container adapted to contain a substance for intradermal injection, said container being in fluid communication with said needle cannula.

15. The drug delivery device of claim 14, wherein said needle tip extends beyond said skin engaging surface a distance of about 0.5 mm to about 3 mm.

16. The drug delivery device of claim 14, wherein said needle tip extends beyond said skin engaging surface a distance of about 0.5 mm to about 3 mm.

17. The drug delivery device of claim 16, wherein said needle tip extends beyond said skin engaging surface a distance of about 1 to about 2 mm.

18. The drug delivery device of claim 14, wherein said skin engaging surface is substantially planar.

19. The drug delivery device of claim 14, wherein said limiter comprises:
a support member about said needle cannula; and
an outer sheath arranged about said support member and selectively slidable with respect thereto from said first position to said second position.

20. The drug delivery device of claim 19, wherein said limiter further comprises first means for releasably holding said outer sheath in said first position, and second means for lockingly holding said sheath in said second position.

21. The drug delivery device of claim 20, wherein said first means comprises a retaining projection and stop member on said support member and a projection on said sheath.

22. The drug delivery device of claim 20, wherein said second means comprises a proximal stop arranged toward a proximal end of said support member, said proximal stop being configured so as to prevent further proximal movement of said inwardly directed projection from said retracted position.

23. The drug delivery device of claim 22, further comprising a recess proximal said retaining projection for accommodating said inwardly directed projection of said sheath when said limiter is in said retracted position.

24. The drug delivery device of claim 19, wherein said support member includes a distal stop toward a distal end of said support member, a ramp proximal to said outwardly directed projection and an indent interposed therebetween, wherein said inwardly directed projection resides within said indent when said limiter is in said extended position.

25. The drug delivery device of claim 24, wherein said inwardly directed projection includes a proximal edge, said ramp includes a distal edge, whereby said proximal edge is in abutting contact with said distal edge when said limiter is in said extended position.

26. The drug delivery device of claim 19, further comprising a hub about said needle cannula, said hub being adapted to accept a container for delivering a substance.

27. The device of claim 26, wherein said hub and said support member are unitarily formed.